

U.S. Army South Pamphlet 40-1

Medical Services

Plants and Animals of Medical Importance in Panama

**Headquarters
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INTRODUCTION

The Republic of Panama, with a total area of 30,000 square miles, is situated approximately 9° north latitude between Costa Rica in the west and Colombia in the east. The terrain of the country is somewhat heterogeneous, with rugged mountains and cool climate at the higher elevations in the west, and low hills and mountains in the central part and in the east. Most of the forests are in the central canal area, the east, and along the Caribbean coast. The population of about 2 million people is concentrated in the central part and along the western Pacific coast in proximity to the PanAmerican Highway.

Panama has a climate that is typically tropical with an average daily temperature of 80° F and ambient relative humidity ranging from 60 to 100%. Rainfall ranges from about 70 inches on the Pacific to 130 inches on the Atlantic. Uneven distribution of rainfall during the year creates two distinct seasons, an 8-month wet season from mid-April to mid-December and a 4-month dry season the remainder of the year. The dry season is characterized by higher than average daytime temperatures, tree flowering and the presence of northeast winds.

The geographic location of Panama (part of the Continental Divide) between Central and South America has resulted in an extraordinary variety of plants and animals representing the Neotropical and Nearctic regions of the Americas. Panama is regarded to have more diverse species of plants and animals than anywhere else. Because of its location Panama is along the migratory pathway of many species of birds from North to South America. Of the 5,000 species of mammals in the world, 1,500 are found in Panama. Though this rich variety of plants and animals are regarded as principle assets of the country, as everywhere else, they pose potential hazards. This manual has been prepared by Preventive Medicine Services, USA MEDDAC Panama, and is for your use in identifying those hazardous plants and animals that are most likely to be encountered.

This publication is based on information derived from numerous sources, both local and international. Sincere appreciation is extended to all those who have contributed. Personnel from Preventive Medicine Service, Smithsonian Tropical Research Institute, USAG Directorate Training Support Center, 106th U.S. Army Signal Brigade, DOIM Field Printing Plant, USARSO Safety Office, Museo de Invertebrados, University of Panama, and Departamento de Biodiversidad, Museo Nacional de Ciencias Naturales, Madrid, Spain.

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Plants



BLACK PALM
Astrocaryum standleyanum

This common palm grows in low, wet areas of young forests and can be recognized by the numerous several-inch-long, brittle needles on its trunk. Contact with these needles is usually painful, because the tips break off inside the wound. The wounds tend to become infected and should be treated promptly.

(Family: PALMAE)



DUMBCANE, MOTHER-IN-LAW PLANT, OR MONEY PLANT
Dieffenbachia sp.

Dumbcane, commonly grown as a house plant, has large, thick stems that usually lie flat on the ground with the leafy end curving upward 3 to 6 feet above the ground. The dark green leaves may have spots, streaks, or speckles of white, pale or dark green, or greenish-yellow. The juices of this plant contain an irritating substance and needle-like calcium oxalate crystals that irritate mucous membranes, such as the mouth, tongue, and eyes, and may cause serious swelling. When cut, these plants give off a strong, skunk-like odor.

(Family: ARACEAE)



ELEPHANT'S EAR, TARO, DASHEEN, AND OTOE
Colocasia esculenta, *Xanthosoma sagittifolium*, and
Alocasia macrorrhiza

The name "Elephant's ear" has been applied to several large-leaved plants of the arum family. Shown here is *Alocasia macrorrhiza*, widely grown in the tropics as a root crop or an ornamental. The roots of those crops must be boiled before eating to remove their irritating calcium oxalate crystals. All parts of the plant contain the crystals, which may cause pain, severe irritation, and swelling to the mouth, tongue, and throat if ingested raw.

(Family: ARACEAE)



PHILODENDRON
Philodendron sp.

Of the more than 500 species of Philodendron in the world, 37 are found in Panama. Most of them are vines found growing on tree trunks, and a number of them are cultivated as ornamentals. Typical of plants in the arum family, all parts contain calcium oxalate crystals that irritate the mouth, tongue, and throat if ingested.

(Family: ARACEAE)



HUEVO DE TIGRE
Thevetia ahouai

This native plant, found along forest edges, has shiny leaves, yellowish flowers, and bright red shiny fruits, and sometimes is planted as an ornamental. The fruit and seeds are quite poisonous, and care must be taken when trimming this plant because all parts contain abundant milky latex that may cause skin irritation.

(Family: APOCYNACEAE)



LUCKY NUT, OR YELLOW OLEANDER
Thevetia peruviana

This shrub is commonly planted for its funnel-shaped yellow flowers. All parts, including the fruits and seeds are poisonous and will cause gastrointestinal problems if ingested.

(Family: APOCYNACEAE)



OLEANDER
Nerium oleander

This shrub, a popular ornamental, is native to the Mediterranean region and grows to about 9 feet tall. The flowers may be pink, white, or red. All parts of the plant are extremely poisonous if ingested, and many people have died or become seriously ill after eating hot dogs, marshmallows, or other foods roasted on its long, slender branches.

(Family: APOCYNACEAE)



FRANGIPANI

Plumeria acutifolia and Plumeria rubra

Frangipani flowers may be white (Plumeria acutifolia), or various shades of red, pink, or purple (Plumeria rubra). The most common variety has white flowers with a large yellow center. Because of the sweet odor released by the flowers, the tree is often planted near temples and burying grounds, and in some parts of Latin America the flowers are threaded on strings and used to decorate altars. When broken, the stems and leaves exude a milky latex that will stain clothing and may irritate the skin.

(Family: APOCYNACEAE)



**YELLOW ALLAMANDA, GOLDEN TRUMPET, OR BUTTER
CUP FLOWER**
Allamanda cathartica

The showy golden yellow, velvety flowers of this vine make it a popular ornamental, but one should avoid contact with the irritating milky latex that exudes from broken parts of the plant.

(Family: APOCYNACEAE)



MANGO
Mangifera indica

The many cultivars of this tree, introduced from the Old World, are planted throughout the tropics, where mango is considered to be the King of Fruits. Some people are highly allergic to the skin of the fruit and to the milky white sap and cannot eat mangos.

(Family: ANACARDIACEAE)



CASHEW, OR MARAÑON
Anacardium occidentale

Cashew trees seldom grow more than 30 feet high. They are found in fields and on the sides of dry hills. The large kidney-shaped nut hangs from a large, red or yellow, spongy, juicy mass that resembles a red pepper. The pepper-shaped portion can be eaten raw, but the kidney-shaped nut is poisonous unless shelled and roasted to eliminate the poisonous oil. Care must be taken not to allow the oil in the nut to make contact with the bare hands, because it can cause irritation and swelling similar to the symptoms of poison ivy.

(Family: ANACARDIACEAE)



POINSETTIA
Euphorbia pulcherima

Poinsettia, a popular symbol of Christmas, is native to Mexico. All parts of the plant are poisonous. The milky sap causes a rash or blistering upon contact with the skin, and ingestion results in severe irritation to the mouth, throat and stomach.

(Family: EUPHORBIACEAE)



MALA MUJER
Cnidoscolus urens

This plant is common in dry regions along beaches, where it may grow to 5 feet high. The white flowers are about $1/2$ inch in diameter, and the leaves look like small papaya leaves. The plant is armed with stiff hairs that cause stinging pain upon contact with the skin. Usually the pain lasts only a few minutes, but in some cases it may continue for a day or longer and can be accompanied by fever.

(Family: EUPHORBIACEAE)



CASTOR-BEAN
Ricinus communis

The Castor-Bean may grow to 12 feet high. It is native to tropical Africa, but is now naturalized throughout the tropics. The seeds contain several highly toxic substances, and the ingestion of as few as 2-6 seeds can be fatal to an adult.

(Family: EUPHORBIACEAE)



BEACH APPLE, OR MANCHINEEL
Hippomane mancinella

This small tree forms dense thickets along beaches, and can be recognized by its smooth, pale brown bark, and its small, smooth, long-stalked leaves. The fruit, which is poisonous, is a bit more than an inch in diameter and resembles a small green apple. Eating the fruit may be fatal. Contact with the sap of this tree may produce irritation and severe inflammation of the skin, and smoke from burning the woody parts may cause severe eye irritation.

(Family: EUPHORBIACEAE)



SAND BOX TREE

Hura crepitans

The trunk of this large and interesting tree is densely covered with short, sharp spines. The 2- to 4- inch pumpkin-shaped fruit is composed of about 15 crescent-shaped, 1-seeded cells, arranged like the sections of an orange. When the fruit is ripe and dry it explodes, scattering the seeds. The oily seeds may cause severe gastric distress or death if consumed. The milky sap of the tree is also poisonous and may cause serious inflammation upon contact with the skin, or temporary or permanent blindness upon contact with the eyes.

(Family: EUPHORBIACEAE)



COWITCH, OR PICA PICA *Stizolobium pruriens*

This woody vine was introduced from Africa. Typical of many members of the pea and bean family, it has leaves composed of three leaflets, and long pods with the seeds in a row inside. The pods are brown when mature, and are densely covered with fine velvety hairs. When dry, the easily detached hairs can penetrate the skin and cause intense irritation. They are particularly dangerous if they contact the eyes.

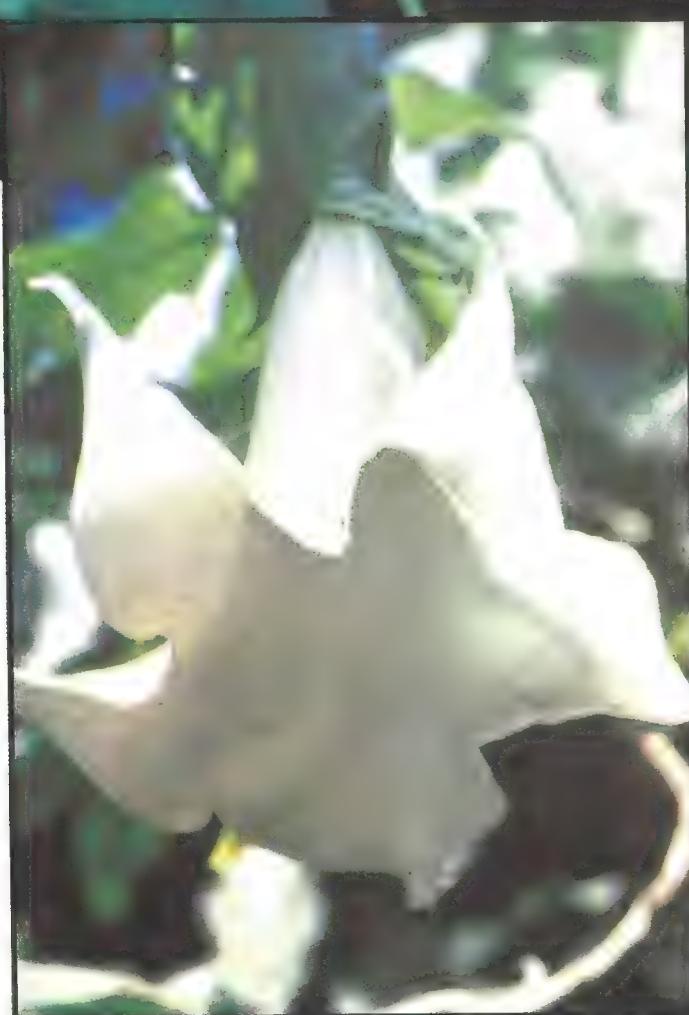
(Family: LEGUMINOSAE)



AKEE
Blighia sapida

This tree, native to West Africa, is planted in Central America. The fruit and seeds are extremely poisonous, but the fleshy pulp surrounding the seeds can be eaten if the following two conditions are met: the fruit must open by itself, and the pulp must be cooked.

(Family: SAPINDACEAE)



**ANGEL TRUMPET AND
JIMSON WEED**
Brugmansia candida and
Datura stramonium

Angel Trumpet, with its large, pendulous, white flowers, and Jimson Weed, with its smaller, erect ones are ornamental shrubs, widely cultivated in warm areas. The leaves and seeds of both plants contain powerful narcotic principles that can be extremely dangerous if ingested.

(Family: SOLANACEAE)



LANTANA
Lantana camara

Of the 150 or more species of Lantana in the World, one of them, Lantana camara, has become a pantropical weed, causing agricultural problems in Hawaii, India, and in certain parts of Africa and Australia. This shrub grows to about 6 feet high and has attractive yellow flowers that turn to orange after pollination. Every part of the plant can be poisonous, especially the fruit, and ingestion can result in severe gastrointestinal problems, salivation, muscular weakness and constriction of the pupils of the eyes.

(Family: VERBENACEAE)

Arthropods



CENTIPEDES

Scolopendra sp., known locally as "Mata caballo"

These elongated, fast-moving arthropods are found under rocks, boards, bark, leaf litter, and cracks or crevices during the day. At night they come out to feed on small insects, and occasionally on baby mice. They inject venom through two powerful claws, located behind the head. Bites to people usually occur when a centipede is picked up by hand, accidentally stepped on by bare feet, or otherwise trapped against the body. Shown here is one of several species of Scolopendra, known locally as "Mata caballo."

(Class: Chilopoda, Order: Scolopendromorpha, several families)



SCORPIONS

Centruroides sp., known locally as "Alacrán"

These nocturnal arthropods, like centipedes, remain hidden during the day. They feed on insects and occasionally on small vertebrates. Small prey is grasped with pincers and chopped into pieces by appendages near the mouth. Larger prey is grasped and quickly jabbed with the stinger at the tip of the tail. Scorpions also use their sting in defense, as is the case with human envenomization. Stings to people usually occur when fingers or toes are introduced into such dark sites as vegetation, under rocks, boards, or in shoes, or clothing. Shake clothing before use, and if stung, capture the specimen and bring it with you to your physician. Scorpion stings can be dangerous to children. Shown here is the female of a species of Centruroides. The local word for scorpion is "alacrán."

(Class: Arachnida, Order: Scorpiones, several families)



TICKS

Known locally as "Garrapata"

These arthropods, not insects, are more closely related to spiders. They are found free-living in, for example, leaf litter and grass, as well as being parasitic on animals. Parasitic forms feed, as adults, on the blood of a variety of birds and animals; a few species feed on humans. They are most abundant during the dry season and can be serious pests to dogs. To ensure the health of your pet, consultation with a veterinarian is encouraged. Various repellents are available to protect you from ticks while at outdoor activities. To remove firmly attached ticks, use a pair of tweezers to grasp the mouth parts with steady pressure, and slowly pull the tick free; clean the site with an antiseptic. Use masking tape to capture ticks found wandering on the skin or clothing, or ticks in the early stages of attachment.



BLACK TARANTULA

Sericopelma rubronitens

The most common tarantula is black with a pubescent orange or red abdomen. During the day, this spider hides in burrows, hollow logs, or other dark places. It does not spin an aerial web, but lines its burrow and the entrance to it with silk. It leaves the burrow at night to seek prey, mostly insects and small rodents. Tarantulas seldom bite humans unless provoked by mistreatment or rough handling, or when fingers or bare feet are introduced into a tarantula burrow. A pair of large, strong fangs can inflict a painful bite by injecting a mild venom that causes local swelling. The bite is not considered life-threatening. In many parts of Latin America, tarantulas are kept as pets. It is important to avoid contact with detached hairs, which are known to produce irritation to mucus membranes, especially the eyes.

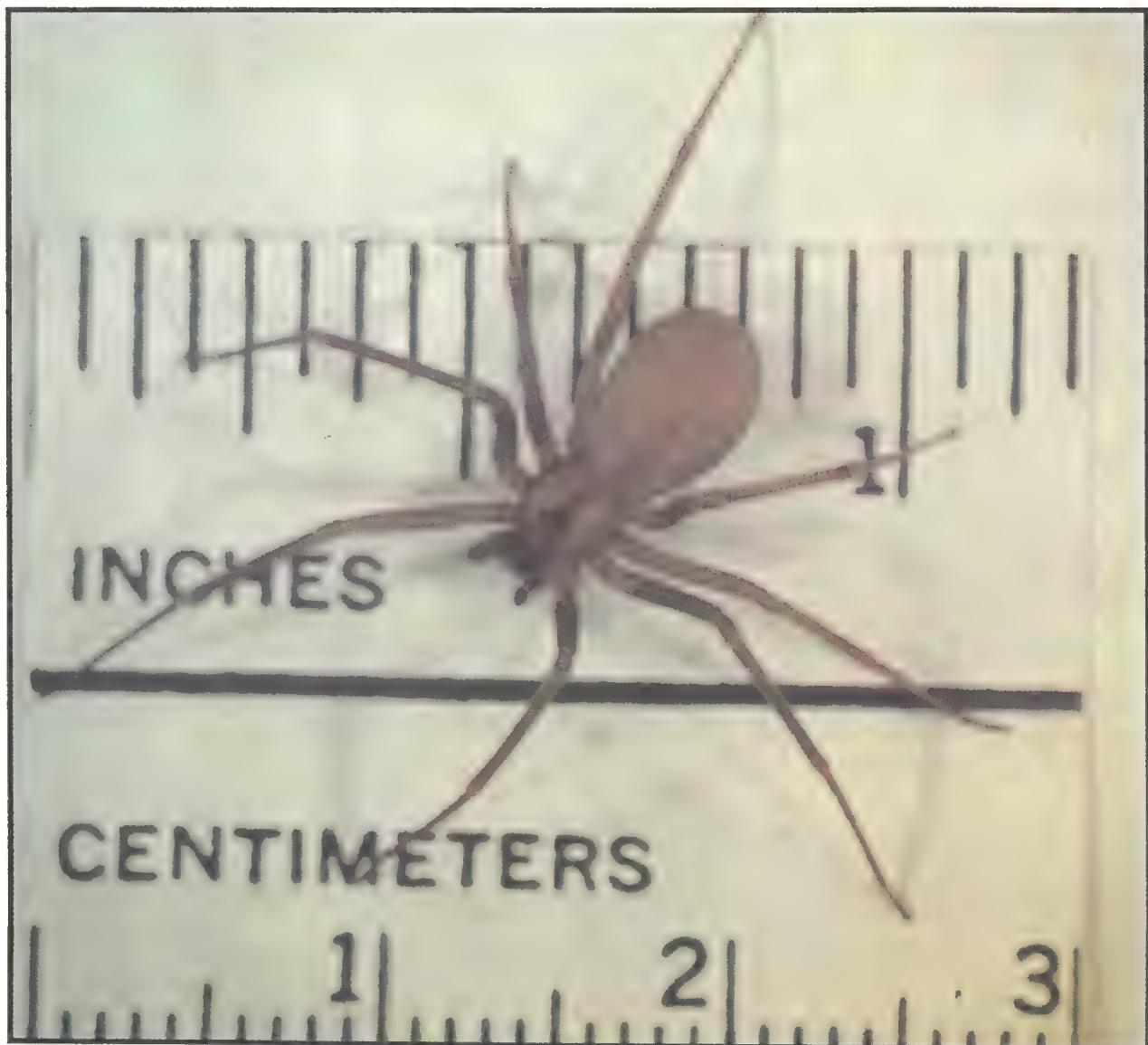
(Class: Arachnida, Order: Araneae, Family: THERAPHOSIDAE)



BLACK WIDOW SPIDER, OR VIUDA NEGRA
Latrodectus mactans

This poisonous spider has a distinctive reddish hourglass mark on its underside. It feeds on small insects and is found hidden in a variety of low habitats, such as under stones, loose bark, wood piles, animals burrows, dark corners in buildings, outdoor toilets, and utility boxes. The bite is poisonous to humans and may be very serious. It is the female that bites and injects the venom. She is especially aggressive when guarding the smooth, white, globular egg sac in her web.

(Class: Arachnida, Order: Araneae, Family: THERIDIIDAE)



BROWN RECLUSE, OR VIOLIN SPIDER
Loxosceles sp.

The brown recluse lives in undisturbed places inside buildings, as well as outdoors underneath refuse. As do all spiders, they feed on various insects. They are non-aggressive and normally attempt to escape when threatened. Most bites occur when the spider is trapped against the skin in clothing or bedding. Bites have also occurred when a person is carrying refuse, or cleaning an old building. The bite produces deterioration of tissue at the wound site with resulting scar tissue. If bitten one should seek medical treatment, and bring the spider to the physician for proper identification and specific treatment.

(Class: Arachnida, Order: Araneae, Family: LOXOSCELIDAE)

CONE-NOSE BUGS

Eratyrus, Panstrongylus, Rhodnius, and Triatoma

These insects feed at night on the blood of warm-blooded animals. During the day they hide in cracks or crevices. Normally their hosts are small mammals, but they feed readily on humans. They commonly are referred to as "kissing bugs" because their blood meals occasionally are taken from the area around the lips, but they will feed also on other areas of the body, and the bite occasionally causes mild pain. In Central and South America these insects sometimes are called "Chagas Bugs" because they transmit the microbe that causes Chagas Disease. It is important to understand that the disease is not passed by handling the bug or through its bite. Rather, the microbes are located in the feces of the bug and are transmitted when the animal or human host scratches them into a break in the skin.

(Class: Insecta, Order:
Hemiptera, Family: REDUVIIDAE)



CONE-NOSE BUG
Triatoma dimidiata



CONE-NOSE BUG
Rhodnius pallescens



HAG MOTH CATERPILLAR
Phobetron sp.

STINGING CATERPILLARS

Caterpillars are the larval forms of moths and butterflies. In Panama, although the majority of spiny caterpillars are harmless, a number of species can inflict a painful sting when touched. The sting reaction is caused by toxins released when the spines enter the skin and break off in the wound. In some cases, such as the Puss moth caterpillar, the poisonous spines are hidden among harmless fluff, while in others, such as the Saddle-back, Hag moth, and saturniid moth caterpillars, the poisonous spines are quite visible. Many poisonous caterpillars are brightly colored to warn animals away, but poisonous and non-poisonous species can be very difficult to distinguish, so it is better not to handle any of them. The stinging caterpillars most commonly encountered are pictured. In extreme cases, reaction to the sting of the Puss moth caterpillar may include headache, nausea, vomiting, shock, and convulsions. The Saddle-back and Hag moth caterpillars, when touched, elicit an intense burning pain that may last 1 to 2 hours. Many stinging caterpillars feed in groups, and a child falling into infested bushes may receive multiple stings.

(Class: Insecta, Order: Lepidoptera,
Families: MEGALOPYGIDAE,
LIMACODIDAE, and SATURNIIDAE)



SATURNIID CATERPILLAR



SADDLE-BACK CATERPILLAR
Sibine sp.



PUSS MOTH CATERPILLAR
Megalopyge sp.



HYLESIA OR PHANTOM MOTH
Hylesia sp.

Although the caterpillars and cocoons of these moths (several species) have spines that cause skin irritation upon contact, a more serious health threat is posed by the spines located on the abdomen of the adult female moth. The female moth uses these spines to cover and protect her egg mass. Hylesia adults emerge in great numbers at certain times of the year and are attracted to light. The spines of the female abdomen detach easily and become airborne when the moth flutters around lights at night. When they come into contact with exposed skin, these spines cause eruptions and associated itching. Many people suffer upper respiratory tract complications after inhaling the spines.

(Class: Insecta, Order: Lepidoptera, Family: SATURNIIDAE)



AFRICAN HONEY BEE

Apis mellifera

These bees have been established in Panama since 1982. They build their nests both in wild habitats, such as holes in trees and in the ground, and in domestic habitats, such as houses, tires, flower pots, and various machinery. Like most bees, they collect nectar and pollen from flowers, and they are attracted to garbage and sweets.

The African bee is a very close relative of the common Italian or European honey bee, which was imported to North and South America by European colonists. The worker bees defend the colony or queen by stinging. They deliver the same kind and amount of venom as the common honey bee. However, the African bee is more easily provoked to sting, may attack with little cause, may do so more aggressively and in greater numbers, and will follow the victim up to two miles. As do honey bees, African bees die soon after they sting, because the stinger, venom sac, and associated parts remain embedded in the victim.

(Class: Insecta, Order: Hymenoptera, Family: APIDAE)



PAPER WASPS Polistes, Polybia, and Synoeca

There are many types of paper wasps found in Panama that can inflict painful stings. Because of their social nesting habits and abundance, these insects can be dangerous. Paper wasps chew vegetation and wood fiber into a pulp to produce paper-like material for nest construction. Nests often are built within dense tangles of vegetation, or are attached to the undersides of broad leaves (such as palm leaves), or in some cases in association with ant nests on tree limbs. Wasps feed primarily on other insects, which are chewed, brought to the nest and placed in the cells to feed the developing larvae. Some types of paper wasps can sting their victims several times, because their stingers are not barbed and thus do not become detached in the victim. Unlike African bees, most wasps have to be provoked before attacking, but, like bees, because of their social nature, disturbance of the nest can result in attack by a number of wasps. Running a short distance and then remaining still usually loses attacking wasps. Shown here is Polistes canadensis, one of the commonest wasps encountered locally.

(Class: Insecta, Order: Hymenoptera, Family: VESPIDAE)



MAIZ NACIDO
Apoica pallescens

This attractive wasp is unusual in being active only at night, and they are often attracted to light. This species suspends its inverted funnel-shaped nest from a small branch in a forested area, and during the day the wasps rest suspended from the nest by their mandibles. Thus arranged, their overlapping yellow abdomens give the nest the appearance of a rare tropical fruit. This particular wasp is not especially aggressive, but will sting if sufficiently provoked.

(Class: Insecta, Order: Hymenoptera, Family: VESPIDAE)



FOLOFA ANT, OR PARAPONERA **Paraponera clavata**

This ant is also called the "Cha-cha-cha" ant because of the painful sting and resulting cha-cha-cha movements of its victim. Because ant stingers are retractable, these and all stinging ants can sting their victims repeatedly. Folofa ants are black, about one-inch long, and are found primarily in the forest. They construct their nest in the ground, at the base of a tree. Stamping on the ground near the nest tree usually is sufficient to bring soldiers out of the nest in search of the disturbance.

(Class: Insecta, Order: Hymenoptera, Family: FORMICIDAE)



FIRE ANTS
Solenopsis sp.

These ants make up for their small size by biting and stinging very aggressively when their nest is molested. They feed on a wide variety of food, from vegetable matter, to meat and meat products. They are a particular problem to pets as they readily feed on pet food composed of meat. Some people are sensitive to the stings and may suffer localized pain and swelling, or in rare cases, a severe generalized reaction.

(Class: Insecta, Order: Hymenoptera, Family: FORMICIDAE)

Amphibians and Reptiles



MARINE TOAD
Bufo marinus

This toad feeds on insects, especially large ants, at night. It is common in housing areas. It has two large glands on the sides of its head-neck region that secrete a poisonous substance when handled roughly. Each year it is reported that this toad is involved in the death of one or two dogs as the result of their playing with or eating this toad.

(Family: BUFONIDAE)



GOLDEN FROG
Atelopus zeteki

This frog is found in many highland places in Panama, including El Valle in Coclé Province; Cerro Azul; Fortuna in Chiriquí Province; and at Cerro Campana. Like the poison dart frogs, this frog has poison glands in its skin.

(Family: BUFONIDAE)



HARLEQUIN FROGS AND POISON DART FROGS

Atelopus spp. and Dendrobates spp.

These small frogs come in a variety of brilliant colors, and are found in forested areas, where they feed by day on mites and insects. Their skin has a series of glands that secrete a poisonous substance; it is this substance that the Indians use to tip darts for hunting. Shown here are Atelopus varius, and Dendrobates auratus.

(Families: BUFONIDAE and DENDROBATIDAE)

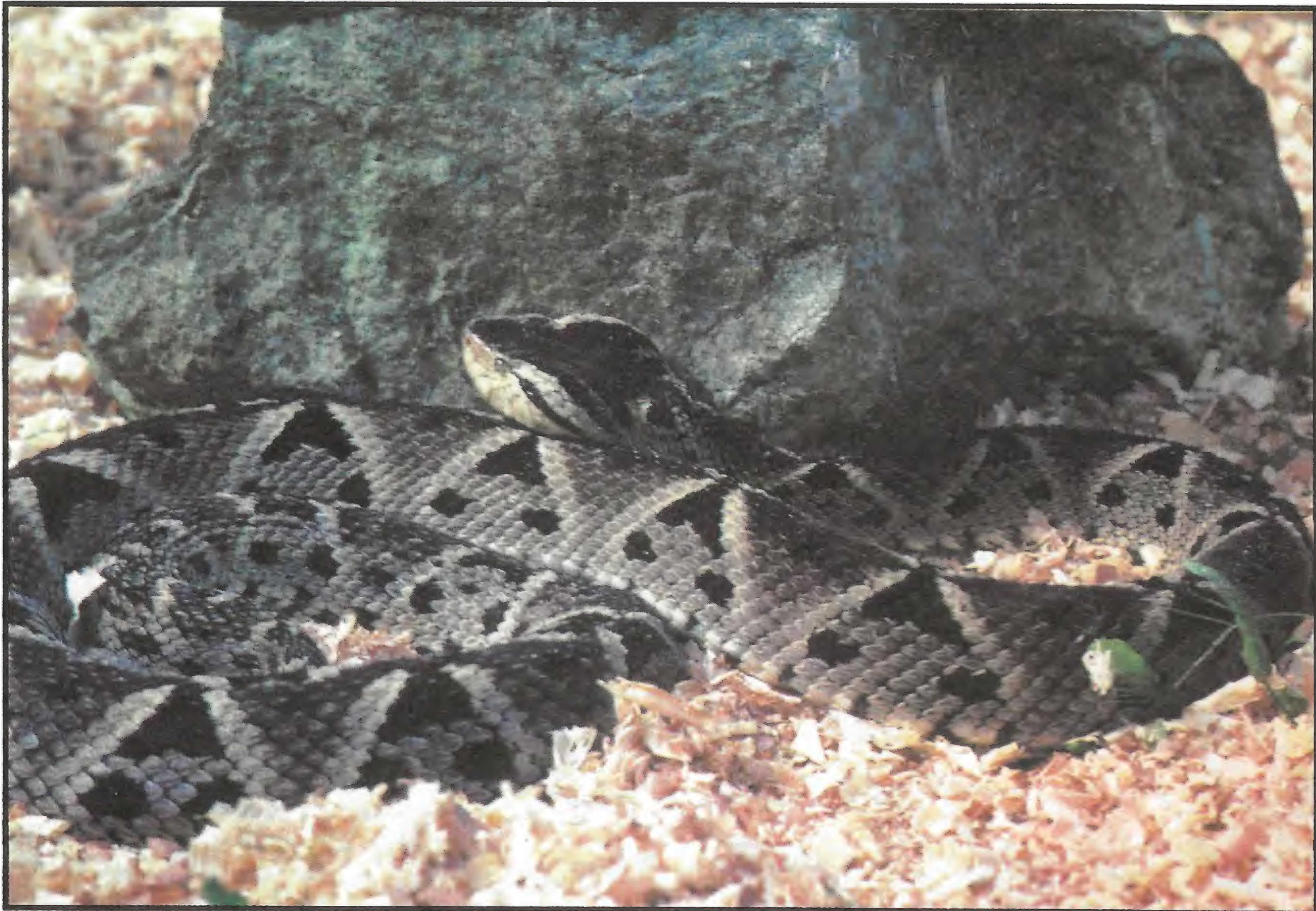




BUSHMASTER
Lachesis muta

This is the world's largest viper and second largest of all poisonous snakes. The body color is pale brown or tan with a series of about 23 wide black markings on the back and narrowing on the sides. A dark streak extends from the eye and commonly is broken up on the neck into a number of black spots. This terrestrial snake favors primary forest and very seldom leaves its habitat. It may reach a length of 12 feet, but the average is less than 8 feet. The tail ends in a sharp-pointed cuticular spine about half an inch long. This snake lays eggs, however most of them are eaten by jungle animals, which may explain why this snake is not abundant.

(Family: CROTALIDAE)



FER-DE-LANCE
Bothrops asper

This is the most common poisonous snake in the Panama Canal Area, including housing areas. Unlike the bushmaster, it gives birth to live young in litters of 40 to 70 and occasionally 100 snakes. This high birth rate may account for its being such a common snake. Its maximum length is 8 feet, but the average length is closer to 5 feet. Coloration is variable and ranges from gray to olive, brown, or even reddish, with dark, light-edged cross bands or triangles, the apices of which extend to the center of the back. Adults are terrestrial, but the young can climb small bushes.

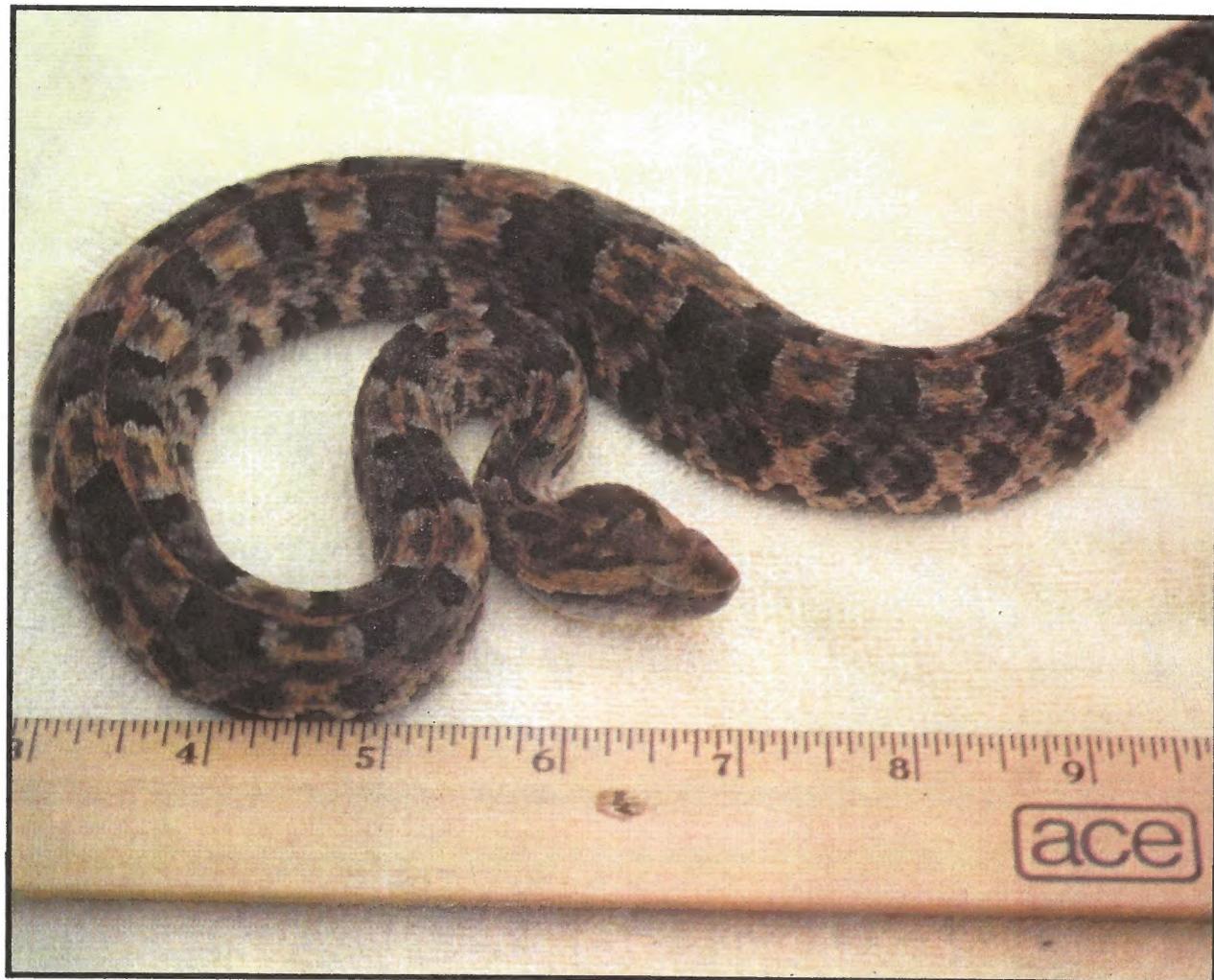
(Family: CROTALIDAE)



EYELASH VIPER, OR PALM VIPER
Bothriechis (Bothrops) schlegelii

This snake occurs in several colors, but the most common coloration is a mossy or olive green with red, brown, and black speckling. There is also a form that is entirely yellow and is known as the "oropel," and another that is pale lemon with little black markings. This poisonous snake is generally a forest dweller being found among tree branches.

(Family: CROTALIDAE)



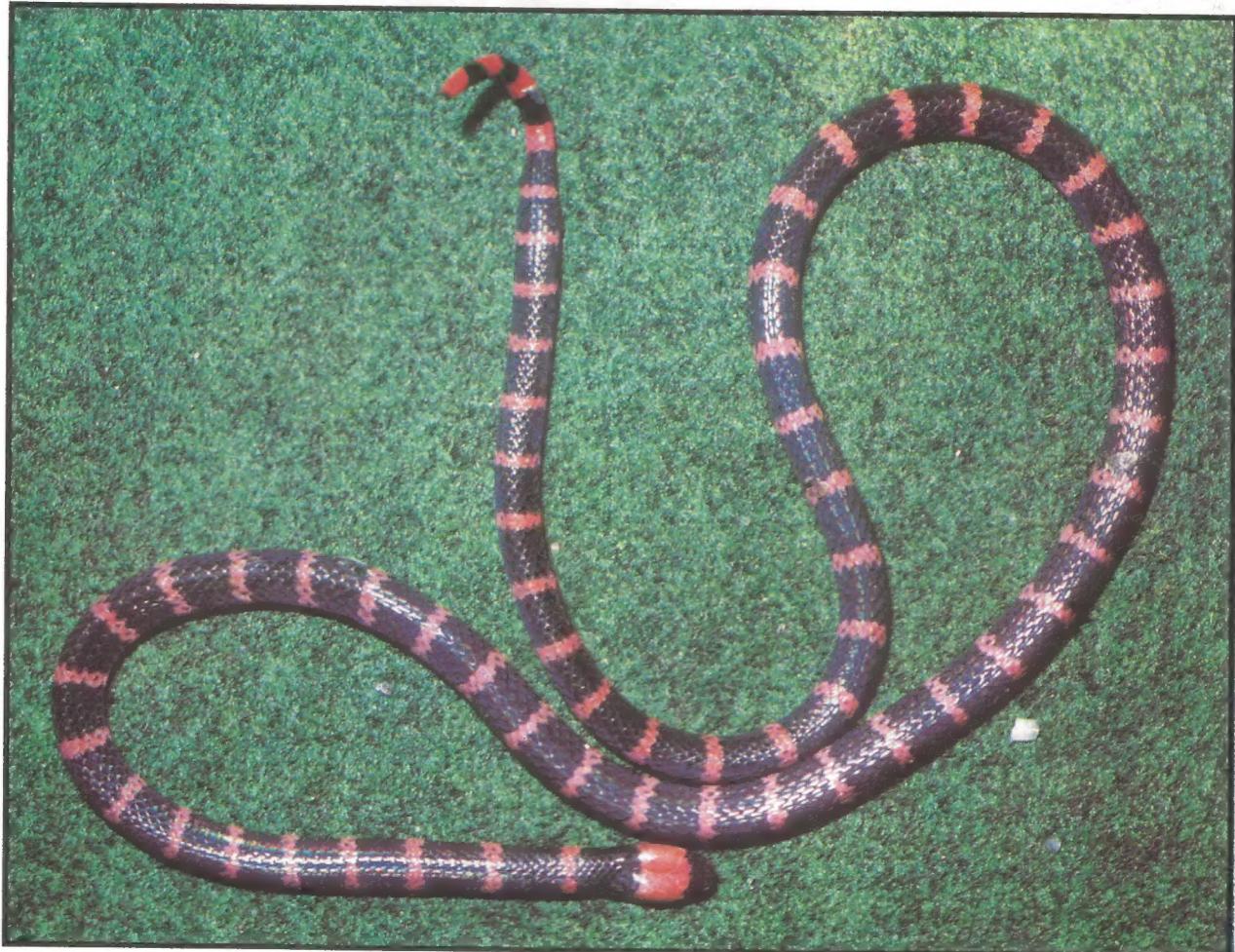
PACIFIC HOG-NOSED PIT VIPER
Porthidium (Bothrops) lansbergii

The snout of this poisonous snake is pointed and turned upward. The body is brown with a double row of darker markings, separated by a paler line, and often united to form a zig-zag chain along the back. This snake averages about 1.5 to 3 feet in length and is common in grassy areas of Panama.

(Family: CROTALIDAE)

CORAL SNAKES
Micrurus spp.

In Panama there are several species of coral snakes, all with characteristic multicolored bands. All have very small eyes and all are poisonous. Rhymes used in the United States to distinguish poisonous coral snakes from similarly colored, non-poisonous snakes are not applicable in Panama. The two most common coral snakes are:



BICOLORED CORAL SNAKE
Micrurus multifasciatus

This snake is red and black and sometimes reaches a length of four feet. On occasion it is found under loose boards and stoves in housing areas.

(Family: MICRURIDAE)



TRICOLORED OR COMMON CORAL SNAKE
Micrurus nigrocinctus

This snake averages 12 to 22 inches in length and is lightly colored with bands of red, yellow, and black completely encircling the body. The red bands always are bordered by yellow or cream white. The tip of the snout, and all of the upper surface of the head as far back as the eyes, are black. The eyes also are black. This snake is very secretive in its habits.

(Family: MICRURIDAE)

FOR THE COMMANDER:

OFFICIAL: PATRICK H. DOWNING
Colonel, GS
Chief of Staff



Deputy Chief of Staff,
Information Management

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